



Review of Major Testing Initiatives and Recent Technical Advances

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1

TECHNICAL ADVANCES



- Lab
 - Iris
 - Face
 - Voice
 - Fingerprint
 - Hand Geometry

2

FACIAL RECOGNITION



- A. Georghidades, P. Belhumeur, D. Kriegman, “From Few to Many: Illumination Cone Models for Face Recognition Under Variable Lighting and Pose”, to appear Trans. PAMI
- G. Pike, R. Kemp, and N. Brace, “The Psychology of Human Face Recognition”, IEE Conf. on Vis. Biomet., 02/02/'00, Savoy Place, London
- **Same Day FAA = 34% FRR = 7%**

3

VOICE



- G. Doddington, “Some Experiments on Idiolectal Differences Among Speakers”, www.nist.gov/speech/tests/spk/2001/doc/
- G. Doddington, “Speaker Recognition Based on Ideolectal Differences Among Speakers”, and
- W. Andrews, M. Kohler, J. Campbell, “Phonetic Speaker Recognition”, Proc. Eurospeech 2001, Aalborg, Denmark, Sept. 3-7, 2001

4

FINGERPRINT



S. Pankati, S. Prabhakar, and A. Jain,
“On the Individuality of Fingerprints”,
IEEE Conference on Computer Vision
and Pattern Recognition, Hawaii,
December 11-13, 2001

<http://biometrics.cse.msu.edu/cvpr230.pdf>

5

HAND GEOMETRY: INSPASS



6

TESTING



**“Testing is the basis of all
technical progress”**

-- George Doddington

7

TYPES OF TESTS



- Technical
 - Technology
 - Scenario
 - Operational
- Vulnerability
- Security (Common Criteria)

8

WE AREN'T TESTING (yet)



- Business Case
 - Costs
 - Savings
- User attitudes
- Public perception
- Privacy safeguards

9

GOVERNMENT TESTS (PUBLISHED RESULTS)



- NIST Speaker Verification Competition
www.nist.gov/speech/tests/spk/2001/index.htm
- Linguistics Data Consortium at U of Penn.
www ldc.upenn.edu
- FERET/Facial Recog. Vendor Test 2000
www.dodcounterdrug.com/facialrecognition/FRVT2000/documents.htm
- Fingerprint Verification Competition
<http://bias.csr.unibo.it/fvc2000>

10

GOVERNMENT TESTS (PUBLISHED RESULTS)



- Communications Electronic Security Group/Office of E-envoy
 - U.K. Biometrics Working Group
www.cesg.gov.uk/biometrics
 - “Best Practices for Testing and Reporting Biometric Device Performance”
 - National Physical Lab Test

11

GOVERNMENT TESTS (NO PUBS YET)



- Korean Information Security Agency
 - www.kisa.or.kr/en-kisa/team/evaluation/index.html
- Other US
 - Capitol Police
 - State Department
 - Army Research Lab

12

JAPANESE TESTS



- Information Technology Research and Standardization Center/Japan Standards Agency
 - “Standardization of test and evaluation of biometric devices and systems for electronic commerce applications”
- Automatic Identification Manufacturers Association of Japan
 - “Research biometrics technologies and their market”

13

GERMAN TESTS



- GISA www.bsi.bund.de
- TeleTrusT www.teletrust.de
 - Funding:
 - Ministry of Technology
 - Banking Industry
 - BW6 (Biometric Identification Systems)
 - BioTrusT

14

EUROPEAN UNION 5th Framework



- 4 biometrics projects
- Bee: Business environment of biometrics involved in electronic commerce
 - www.beeometrics.org
 - Business case/privacy development

15

OTHER PROJECTS



- Australian Biometrics Testing Org.
 - www.biomet.org/testing.html
- National Safe Skies Alliance
 - www.nssa-safeskies.org
- International Biometrics Group
 - “Comparative Biometric Testing”
 - www.biometricsgroup.com

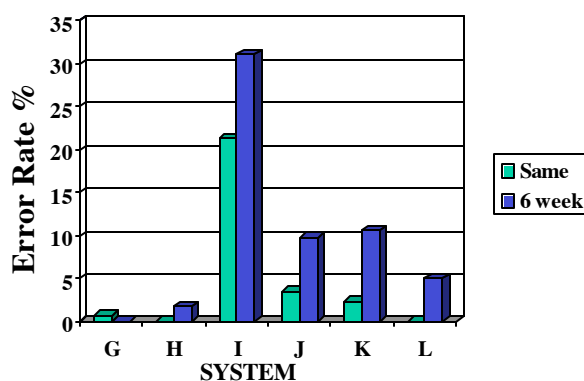
16

IBG FP False Non-Match Rate Testing



Low Threshold

Same day/6 week Testing



17

VULNERABILITY TESTING



- U.K Biometric Working Group
“Principles of Biometric Security System Vulnerability Assessment”
- von der Putte and Keuning, “Don’t Let Your Fingers Get Burned”
- West Virginia University/Center for Identification Technology Research www.csee.wvu.edu/citer
- T. Matsumoto, et al, “Gummy Fingers”, Proc. SPIE, Vol. 4677, Jan. 2002
- FRVT2000

18

COMMON CRITERIA TESTING



- www.commoncriteria.org
- History
 - U.S. TCSEC Orange Book (1985)
 - Canada Criteria (1993)
 - European ITSEC (1991)
- ISO 15408 (1996)
- 12 National Signatories
 - US = NIST and NSA

19



THE END

20